



Dart Hawkesbury
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5001117

D119-796-241
Job Sheet 162392



Part No: D119-796-241

Job Qty: 1 ea

Part Name: Aft Crosstube Installation Without Step (No Hardware)



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 10/15/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG REV J IPP REV:A 14.09.03 NEW ISSUE DD VERF:JLM IPP REV:B 14.10.15 AS PER REV.B DD
VERF:JLM IPP REV:C 14.11.19 AS PER REV.C DD VERF:JLM IPP REV:D 14.12.12 AS PER REV.pd1 DD
VERF:JLM IPP REV:E 15.02.11 AS PER REV F JLM VERIFIED BY:DD IPP REV:F 17.05.08 AS PER IIN
REV.F DD VERF:JFS

Ship Via:

Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
D119-796-241 Aft Crosstube Installation Without Step (No Hardware)	DWG REV J IPP REV:A 14.09.03 NEW ISSUE DD VERF:JLM IPP REV:B 14.10.15 AS PER REV.B DD VERF:JLM IPP REV:C 14.11.19 AS PER REV.C DD VERF:JLM IPP REV:D 14.12.12 AS PER REV.pd1 DD VERF:JLM IPP REV:E 15.02.11 AS PER REV F JLM VERIFIED BY:DD IPP REV:F 17.05.08 AS PER IIN REV.F DD VERF:JFS		0.000	
CR3212-4-07 Cherry Rivet			0.000	
D119-796-241TRN Crosstube Turning Detail	DWG REV J IPP REV A RQ 14/05/27 VERIFIED BY DD IPP REV:B 16.05.04 AS PER DWG REV.I DD VERF:JLM		0.000	
D2873-043 Nut Plate Assembly	DWG REV A IPP A 05.09.13 New issue KJ/JLM		0.000	
D5122-1 Center Support, Upper	DWG REV A SHEETS 1,2 IPP REV.A NEW ISSUE JFS 14/07/16 VERIFIED BY: DD		0.000	
D5123-1 Clamp Cushion	DWG REV D IPP REV:A NEW ISSUE 14/08/08 JLM VERIFIED BY:RQ IPP REV:B 16-11-11 AS PER DWG REV.D DD VERF:JLM		0.000	
D5123-5 Clamp Cushion	DWG REV D IPP REV:A NEW ISSUE 14-08-28 VERIFIED BY:DD IPP REV:B 16- 11-11 AS PER DWG REV.D DD VERF:JLM		0.000	
D5134-041 Damper Support Assembly, LH	DWG REV B IPP REV:A NEW ISSUE 14-09-09 JLM VERIFIED BY:DD		0.000	
D5134-042 Damper Support Assembly, RH	DWG REV B IPP REV:A NEW ISSUE 14-09-09 JLM VERIFIED BY:DD		0.000	
D5136-1 Contact Pad, LH	DWG REV A IPP rev A RQ verified by: JLM		0.000	
D5136-2 Contact Pad, RH	DWG REV A IPP rev:A NEW ISSUE 14.09.02 RQ verified by JLM		0.000	
D5152-043 Aft Post Mount Assembly	DWG REV B SHEET 1 IPP REV:A 15.01.09 NEW ISSUE DD VERF:JLM		0.000	
MS21920-2 Clamp			0.000	
MS21920-2 Clamp	Status: Stock	16	0.000	

Part: **D119-796-241 B162392**

Created: 9/30/17 11:16 AM DART.MICHAUD-
FEBRILLE.VICTORIA



Serial No: **S000041**

Printed By: Goldston, Justin 10/2/17 10:44 AM

Op
No

ing

Standard

Run
Hrs

Workcenter/Supplier

Workcenter / Supplier

Lead Time

Plex 10/1/17 1:17 PM Dart.Renwick.Jennifer

90	Start up Operation	1 Ea	10/13/17	0.00	0.00	Start up container
110	DC	1 pcs	10/13/17	0.00	0.00	DC
175	QC	1 pcs	10/14/17	0.00	0.00	
230	SprayPaint	1 pcs	10/14/17	0.00	0.88	Spray Paint
240	QC	1 pcs	10/14/17	0.00	0.00	QC14
242	Crosstubes	1 pcs	10/14/17	0.00	2.50	Crosstube
244	QC	1 pcs	10/14/17	0.00	0.00	QC5
246	SprayPaint	1 pcs	10/14/17	0.00	0.88	Spray Paint
248	SprayPaint	1 pcs	10/14/17	0.00	0.88	Spray Paint
250	QC	1 pcs	10/14/17	0.00	0.00	QC14
252	Crosstubes	1 pcs	10/15/17	0.00	2.50	Crosstube
260	QC	1 pcs	10/15/17	0.00	0.00	QC5
270	Packaging	1 pcs	10/15/17	0.00	0.00	Packaging1
280	QC	1 pcs	10/15/17	0.00	0.00	QC4
290	Packaging	1 pcs	10/15/17	0.00	0.00	Packaging3
300	QC21-FG	1 Ea	10/15/17	0.00	0.00	QC21

MLJ 1710-23

Part Op 110 - Photocopy bluefile and create labels as per PPP D119-796-241 chg 004

Descriptions: 230 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____
 240 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____
 242 - Assemble as per dwg D119-796-241 and QSI 2- Install D5152-043 with proseal 890 on concave surface, 0.100" MIN thick as per dwg using DT10112 (identified right and left) 3- Install center support without bonbing. 4- Install Damper support and contact pads using proseal 890 per dwg and clamp in position.
 244 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____
 246 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____
 248 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____
 250 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____
 252 - 1- Re-install non fixed hardware per dwg ***Torque clamps on damper and contact pad to 80-100 IN-LBS.*** 2- Apply a file-seal of proseal 890 around damper supports and contact pads.
 260 - ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED AS PER DWG.*** 1- ATTACH A RED TAG TO CENTER SUPPORT THAT READS CENTER SUPPORT NOT FIXED THEN DATE AND STAMP IT.
 290 - Identify and pack for shipping as per PPP D119-796-241

Job BOM

Part / Item	Component Name	Quantity	Operation	Special Comments
D119-796-241 B162392		1 Ea (1 ea)	90-Start up Operation	
CR3212-4-07	Cherry Rivet	16 Ea (16 ea)	242-Crosstubes	137851 x16
D2873-043	Nut Plate Assembly	4 Ea (4 ea)	242-Crosstubes	163314 x4
D5122-1	Center Support, Upper	1 Ea (1 ea)	252-Crosstubes	162550 x1
D5123-1	Clamp Cushion	6 Ea (6 ea)	252-Crosstubes	153232 x6
D5123-5	Clamp Cushion	2 Ea (2 ea)	252-Crosstubes	153235 x2
D5134-041	Damper Support Assembly, LH	1 Ea (1 ea)	252-Crosstubes	162546 x1
D5134-042	Damper Support Assembly, RH	1 Ea (1 ea)	252-Crosstubes	162899 x1
D5136-1	Contact Pad, LH	1 Ea (1 ea)	252-Crosstubes	156439 x1
D5136-2	Contact Pad, RH	1 Ea (1 ea)	252-Crosstubes	156504 x1
D5152-043	Aft Post Mount Assembly	2 Ea (2 ea)	252-Crosstubes	162548 x2
MS21920-25	Clamp	6 Ea (6 ea)	252-Crosstubes	138336 x6 / 5001075
MS21920-28	Clamp	2 Ea (2 ea)	252-Crosstubes	138336 x2

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D119-796-241 B162392	1	1	0	0
242-Crosstubes	CR3212-4-07	16	0	0	0
	D2873-043	4	0	0	0
252-Crosstubes	D5122-1	1	0	0	0
	D5123-1	6	0	0	0
	D5123-5	2	0	0	0
	D5134-041	1	0	0	0
	D5134-042	1	0	0	0
	D5136-1	1	0	0	0
	D5136-2	1	0	0	0
	D5152-043	2	0	0	0
	MS21920-25	6	0	0	0
	MS21920-28	2	0	0	0

270
PK9

2x AN174-3A

4x NAS1149D0432J

2x A752W4244

500125

5001123

5001124

Part Specifications

Specifications could not be found.

Plex 10/1/17 1:17 PM Dart.Renwick.Jennifer

Work Order Summary

Thursday, September 28, 2017 8:28:08 AM

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Criteria : Work Order ID: 162392 Item ID: D119-796-241 Product Family CROSSTUBES
 Work Order Start Dates 6/22/2017 to 6/22/2017 11:59:59 PM Work Order Required Dates 7/19/2017 to 7/19/2017 11:59:59 PM
 All References
 Work Order Status Released

Work Order ID 162392 Required Qty 1.0000 Status Code Released
 Item ID D119-796-241 Accepted Qty 0.0000 Scrap Qty 0.0000
 Item Name AFT Crosstube Installation without Step (no hardware)
 Current Acct Value \$4,652.138

Start Date 6/22/2017 Required Date 7/19/2017 Completed Date

Standard	** Actual **		** Acct. Value **	** Variance **	** Variance % **
Direct Costs	Total	Each	Each	Each	Each
Material	\$578.281	\$0.000	\$943.247	\$943.247	100.00%
Labor	\$366.549	\$0.000	\$958.097	\$958.097	100.00%
Outplant	\$90.938	\$0.000	\$95.321	\$95.321	100.00%
Variable Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$1,208.354	\$0.000	\$2,712.875	\$2,712.875	100.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
** Total **	\$2,244.121	\$0.000	\$4,709.539	\$4,709.539	

Item ID/Item Name	Required Qty	Issue Code	Issue Date	Issued Qty	Cost Amount
PO ID PO-Line Nbr PO Receiver Date Domestic Unit Price PO Receipt Qty Domestic Received Amt Certification Standard					
D119-796-241TRN					
Crosstube Turning Detail					
PO Rout Seq ID PO Vendor ID	1.0000	VC-SKY001	9/7/2017	1.0000	\$1,283.942
PO37837 11 9/26/2017 3:13:00 PM \$90.9378 1.0000 \$90.938				m138600	
				Total Matl Amts:	\$1,283.942

Invoice Rout Seq ID Invoice Vendor ID VC-SKY001

Invoice ID	Invoice Line Nbr	Invoice Date	Invoice Unit Price	Invoice Qty	Invoice Amt
MWQ33228	11	9/26/2017 2:38:06 PM	90.9378	1.0000	\$90.938

Work Center CNC Bend 2

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
grou01		9/7/2017										
130			0.00	0.00	1.58	1.58	1.00	\$0.000	\$29.315	\$96.632	\$0.000	\$125.947
		9/8/2017										
130			0.00	0.00	1.68	1.68	1.00	\$0.000	\$31.298	\$103.171	\$0.000	\$134.469
pain01		8/30/2017										
130			0.58	0.58	0.00	0.00	1.00	\$10.700	\$0.000	\$35.273	\$0.000	\$45.973
whit01		9/7/2017										

130			0.00	0.00	1.85	1.85	1.00	\$0.000	\$34.470	\$113.625	\$0.000	\$148.095
	9/8/2017											
130			0.00	0.00	1.70	1.70	1.00	\$0.000	\$31.614	\$104.213	\$0.000	\$135.827
Total:			0.58	0.58	6.82	6.82	5.00	\$10.700	\$126.697	\$452.914	\$0.000	\$590.311

Work Center Crosstubes

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
PAIN01												
	9/11/2017											
150			0.00	0.00	1.50	1.50	1.00	\$0.000	\$27.885	\$91.920	\$0.000	\$119.805
whit01												
	9/11/2017											
145			0.00	0.00	3.21	0.80	4.00	\$0.000	\$14.935	\$49.232	\$0.000	\$64.168
Total:			0.00	0.00	4.71	2.30	5.00	\$0.000	\$42.820	\$141.152	\$0.000	\$183.973

Work Center HandFXtube

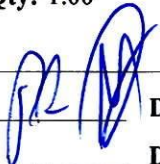
Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
pain01												
	9/12/2017											
160			0.00	0.00	1.19	1.19	1.00	\$0.000	\$22.102	\$72.856	\$0.000	\$94.958
Total:			0.00	0.00	1.19	1.19	1.00	\$0.000	\$22.102	\$72.856	\$0.000	\$94.958

Work Order ID 162392

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Page 1

Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:
Approvals: Process Plan:  Date: 6-17-2017 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D119-796-241	DAS 03 9-89 <i>XJ 17-6-7</i>								
110	Document Control	0.00							
110									
DC	Memo	0.02							
Doc.Control -USB or Paperwork	Photocopy bluefile and create labels as per PPP D119-796-241 Chg 005								
120	Pick Kit	0.00							
120	Packaging								
Packaging	Memo	0.02							<i>JW 17-09-07</i>
Packaging									
130	BENDING MACHINE - CROSSTUBES	0.94							
130									
CNC Bend 2	Memo	1.41							
CNC Alpha 160 Bender	Bend tube as per Dwg D119-796-241 using CNC bender program								<i>JW 17-09-08</i> <i>MGL</i>

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC15- Crosstube Dimensional Check	0.00							
140									
QC	Memo	0.02							
Quality Control									
145		0.00							
145									
Crosstubes	Memo	2.82							
Crosstubes	1- CUT TUBE AT HEIGHT ON FAI SHEET								
	2- VERIFY HEIGHT: <u>25.1</u>								
	BY QC15 LEVEL INSPECTOR: <u>17-09-11</u>								
	3- DEBURR CUT SURFACE								

DAS
9
9-89

① 17-09-11

/ e JW

17-09-11

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Crosstubes	0.52							
150		1.63							
Crosstubes	Memo								
Crosstubes	***** ENSURE PROPER JIG POSITIONING *****								
	1-DRILL TUBE AS PER DWG USING DT10087								
	2- DRILL RIVET HOLES USING DT8787 FWD								
	3- DEBURR AND C'SINK RIVET HOLES AS PER DWG								
	4- FLIP TUBE, REPEAT STEP 2 AND 3								
	5- SCRIBE PART# AND BATCH# USING VIBRATING STYLUS ON INSIDE OF CUFF AS PER DWG D119-796-141								

GP 17 09 11

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Crosstubes Chemical Conversion	0.00							
160									
HandFXtube	Memo	1.69							
Hand Finishing Crosstubes	1- INSPECT AND REMOVE ALL MARKS FROM TUBE WITHIN LIMITS ON DWG D119-796-141 ***IMMEDIATELY AFTER GRINDING*** 2- PRESSURE WASH X-TUBE INSIDE AND OUT 3- ALODINE AND ACID ETCH X-TUBE INSIDE AND OUT AS PER QSI005. 4- Verify grinding marks By: DAS 37 9-89								
170	QC7-Inspect Chemical Conversion Coat	0.00							
170									
QC	Memo	0.02							
Quality Control									

**DAS
37
9-89**

17-09-13

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 *180* Outsource2 Outsource process - NDT	Outsource process - NDT per QSI038 4.1 Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: <u>37837</u> LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order	0.00 0.00				<u>1</u>		<u>SEP 26 2017</u>	<u>DAS</u> <u>13</u> <u>9-80</u>
190 *190* Packaging Packaging	Receive & Inspect for Damage & Mat'l Certs Packaging Memo Ensure copy of NDT results attached to work order.	0.00 0.02							<u>1X Sp 17-9-26</u>
200 *200* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Inspect for damage & ensure results are as per Dwg D119-796-241	0.00 0.02				<u>1</u>		<u>SEP 27 2017</u>	<u>DAS</u> <u>38</u> <u>9-80</u>

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Finish Time: 8:00

~~OCT 07 2017~~

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC14- Inspect Spray Paint	0.00							
240									
QC	Memo	0.00							
Quality Control	***VERIFY BY <u>JB</u> BATCH # TO MATCH W/O								
	***VERIFY BY <u>JB</u> PART # TO MATCH								
	W/O <u>162392</u>								

JB
17-10-16

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
242		0.00							
242						<u>1</u>			DAS 41 9-89
Crosstubes	Memo	1.58							
Crosstubes	Assemble as per dwg D119-796-241 and QSI								OCT 12 2017

1- Abrade mating surfaces with Scotch Brite 7447 and clean with Dupont 4105s or equivalent as per dwg.

2- Install D5152-043 with proseal 890 on concave surface, 0.100" MIN thick as per dwg using DT10112 (identified right and left)

****MAINTAIN CLAMPING PRESSURE ON FOR MIN 72HRS****

Proseal Batch: 137495
EXP: 1/18
PROSEAL CURE TIME 72 HOURS:
Start: 17-10-12
Finish: 17-10-15

3- USE DT10304 PINS TO LOCATE SUPPORTS. Install center support without bonbing.

4- USE DT10304 PINS TO LOCATE SUPPORTS. Install Damper support and contact pads using proseal 890 per dwg and clamp in position.

Proseal Batch: 137495
EXP: 1/18
PROSEAL CURE TIME 72 HOURS:
Start: 17-10-12
Finish: 17-10-15

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
244	QC5- Inspect part completeness to step on W/O	0.00							
244		0.02							
QC	Memo								
Quality Control	***VERIFY BY <u>JB</u> BATCH # TO MATCH W/O								
	<u>162392</u>								
	***VERIFY BY <u>JB</u> PART # TO MATCH								
	W/O <u>162392</u>								

17-10-16

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Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
246	Spray Painting per QSI005 4.2	0.00							
246									
SprayPaint									
Spray Painting									
	Memo	0.43							
	***VERIFY BY <u>DAS</u> BATCH # TO MATCH W/O								
	<u>162392</u>								
	***VERIFY BY <u>41</u> PART # TO MATCH								
	W/O <u>16239</u> <u>9-89</u>								
	MASK SCRIBE B# & P# AND VERIFY								
	1- Remove all non-fixed hardware and clean any excess proseal.								
	2- Scuff tube with Scotch Brite 7447.								
	3- Mask cuff and all other location as per note#2.								
	4- Prime as per dwg and QSI005								
	Primer Batch: <u>138402</u>								
	Start Time: <u>1000</u>								
	Finish Time: <u>1100</u>								
	5- Apply matte clear as per dwg and QSI005								
	Clear Batch: <u>136205</u>								
	Start Time: <u>200</u>								
	Finish Time: <u>300</u>								

DAS
41
9-89
OCT 16 2017

Work Order ID 162392

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162392

Page 11

Item ID: D119-796-241 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AFT Crosstube Installation without Step (no hardware)
Start Date: 6/22/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/19/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
248	Spray Painting per QSI005 4.2	0.00							
248									
SprayPaint									
Spray Painting									
	Memo	0.60							
	***VERIFY BY <u>DAS</u> BATCH # TO MATCH W/O								
	<u>162392</u>								
	***VERIFY BY <u>41</u> PART # TO MATCH								
	W/O <u>162392</u> <u>9-89</u>								
	MASK SCRIBE B# & P# AND VERIFY								
	1- Mask underside of tube as per dwg. Mask cuff and all other location as per note#2.								
	2- Scuff tube with Scotch Brite 7447								
	3- Paint outside of crosstube								
	Paint Batch: <u>138525</u>								
	Start Time: <u>700</u>								
	Finish Time: <u>800</u>								

DAS
41
9-89
OCT 17 2017

Work Order ID 162392***162392***

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Item ID: D119-796-241**Accept*****N900040100*****Setup Start *NS1*****Revision ID:****Stop *NS2*****Item Name:** AFT Crosstube Installation without Step (no hardware)**Start Date:** 6/22/2017 **Start Qty:** 1.00 ***1*****Cust Item ID:****Required Date:** 7/19/2017 **Req'd Qty:** 1.00 ***1*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start *NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop *NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

250

QC14- Inspect Spray Paint
Crosstubes

0.00

250

QC

Memo

0.02

Quality Control

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

252

0.00

252

Crosstubes

Memo

1.00

Crosstubes

1- Re-install non fixed hardware per dwg

Torque clamps on damper and contact pad to 80-100 IN-LBS.

2- Apply a filet-seal of proseal 890 around damper supports and contact pads.

Allow proseal to dry before inspecting.

Proseal 890 Batch: _____
EXP: _____

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[illegible]

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[illegible]

Picklist Print

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Work Order ID: 162392

162392

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 14.09.03 NEW ISSUE DD VERF:JLM IPP
REV:B 14.10.15 AS PER REV.B DD VERF:JLM IPP REV:C
14.11.19 AS PER REV.C DD VERF:JLM IPP REV:D 14.12.12
AS PER REV.pd1 DD VERF:JLM IPP REV:E 15.02.11 AS PER
REV F JLM VERIFIED BY:DD IPP REV:F 17.05.08 AS PER IIN
REV.F DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN174-3A		Purchased	No			270	Each	30.0000	2	2			
AN174-3A									**				
BOLT													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST332				30					
					M132540			30					
MS21042-4	MS21042L4	Purchased	No			270	Each	2.0000	2	2			
MS21042-4									**				
Nut													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST304				2					
					9063			2					
NAS1149D0432J		Purchased	No			270	Each	1,180.000	4	4			
NAS1149D0432.I									**				
WASHER													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				GA				24					
					m131026			24					
				ST260a				1000					
					m137459			1000					
				ST264				156					
					m134676			156					

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Shop Packet Print

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Picklist Print

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Work Order ID: 162392

162392

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

D119-796-241TRN

Manufactured

No

B162793

130

Each

0.0000

1

**

1

17-09-07

D119-796-241TRN

Crosstube Turning Detail

D2873-043

Manufactured

No

242

Each

97.0000

4

**

4

DAS
41
9-89

OCT 07 2017

D2873-043

Nut Plate Assembly

Location

Loc Qty

Loc Code

LG050 163314
155504
156196
159540
161520

97
5
29
30
33

4

D5122-1

Manufactured

No

252

Each

8.0000

1

**

1

DAS
41
9-89

OCT 12 2017

D5122-1

Center Support, Upper

Location

Loc Qty

Loc Code

LG053 162550
154815
LG054
150243

6
6
2
2

1

D5123-1

Manufactured

No

252

Each

396.0000

6

**

6

DAS
41
9-89

OCT 12 2017

D5123-1

Clamp Cushion

Location

Loc Qty

Loc Code

LG054
153232
160081

396
196
200

6

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

• Picklist Print

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Work Order ID: 162392

162392

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

D5123-5 Manufactured No

252

Each

62.0000

2

2

D5123-5

Clamp Cushion

**

DAS

41

9-89

OCT 12 2017

Location

Loc Qty

Loc Code

LG054

62

151043

2

153235

60

2

DAS

41

9-89

OCT 12 2017

D5134-041 Manufactured No

252

Each

6.0000

1

1

D5134-041

Damper Support Assembly, LH

**

Location

Loc Qty

Loc Code

LG54

6

162546

152415

6

1

DAS

41

9-89

OCT 12 2017

D5134-042 Manufactured No

252

Each

6.0000

1

1

D5134-042

Damper Support Assembly, RH

**

Location

Loc Qty

Loc Code

LG054

6

160899

152447

2

154818

4

1

DAS

41

9-89

OCT 12 2017

D5136-1 Manufactured No

252

Each

11.0000

1

1

D5136-1

Contact Pad, LH

**

Location

Loc Qty

Loc Code

LG055

11

150175

2

156439

9

1

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								

Picklist Print

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Work Order ID: 162392

162392

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

D5136-2

Manufactured No

252

Each

12.0000

1

1

D5136-2

Contact Pad, RH

**

DAS
41
9-89

OCT 12 2017

Location

Loc Qty

Loc Code

LG055

12

150461

3

156504

9

D5152-043

Manufactured No

252

Each

2.0000

2

2

D5152-043

Aft Post Mount Assembly

**

DAS
41
9-89

OCT 12 2017

Location

Loc Qty

Loc Code

LG055

2

162548

154799

2

CR3212-4-07

Purchased No

242

Each

167.0000

16

16

CR3212-4-07

CHERRY RIVET

**

DAS
41
9-89

OCT 07 2017

Location

Loc Qty

Loc Code

LG056

167

137851

m135978

167

16

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								

Picklist Print

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Work Order ID: 162392

162392

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

MS21920-25

Purchased

No

252

Each

128.0000

6

6

DAS

41

9-89

OCT 12 2017

MS21920-25

Clamp

Location

Loc Qty

Loc Code

6

FG

4

120920

2

m134987

2

LG050

124

m136621

2

m136648

25

m136866

22

m137361

25

m137459

25

m137587

25

MS21920-28

Purchased

No

252

Each

93.0000

2

2

DAS

41

9-89

OCT 19 2017

MS21920-28

Clamp

Location

Loc Qty

Loc Code

2

FG

1

105884

1

LG050

80

M136579

5

M137075

25

M137361

25

M137508

25

LG051

1

M132169

1

LG057

2

M134130

2

st543

9

M136740

9

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Shop Packet Print

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Picklist Print

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Work Order ID: 162392

162392

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

D5515-1 Manufactured No 252 Each 18.0000 2 2

D5515-1

Grounding Clamp

**

Location

Loc Qty

Loc Code

ST517

18

160166

18

MS27039-1-08

Purchased No

252 Each

149.0000

2

2

MS27039-1-08

Screw

**

Location

Loc Qty

Loc Code

FP001

89

m136047

3

m137361

86

GA

22

m128636

22

ST281

38

m137361

38

MS21042-3

MS21042L3

Purchased No

252 Each

0.0000

2

2

MS21042-3

Nut

**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

• Picklist Print

Monday, June 05, 2017 4:53:45 PM

Work Order ID: 162392

162392

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0332J

Purchased

No

252

Each

791.0000

4

4

NAS1149D0332.J

Washer

Location

Loc Qty

Loc Code

FP	225	
m136015	8	
m137075	217	
GA	308	
m136643	308	
ST264	258	
m136015	0	
m137412	258	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

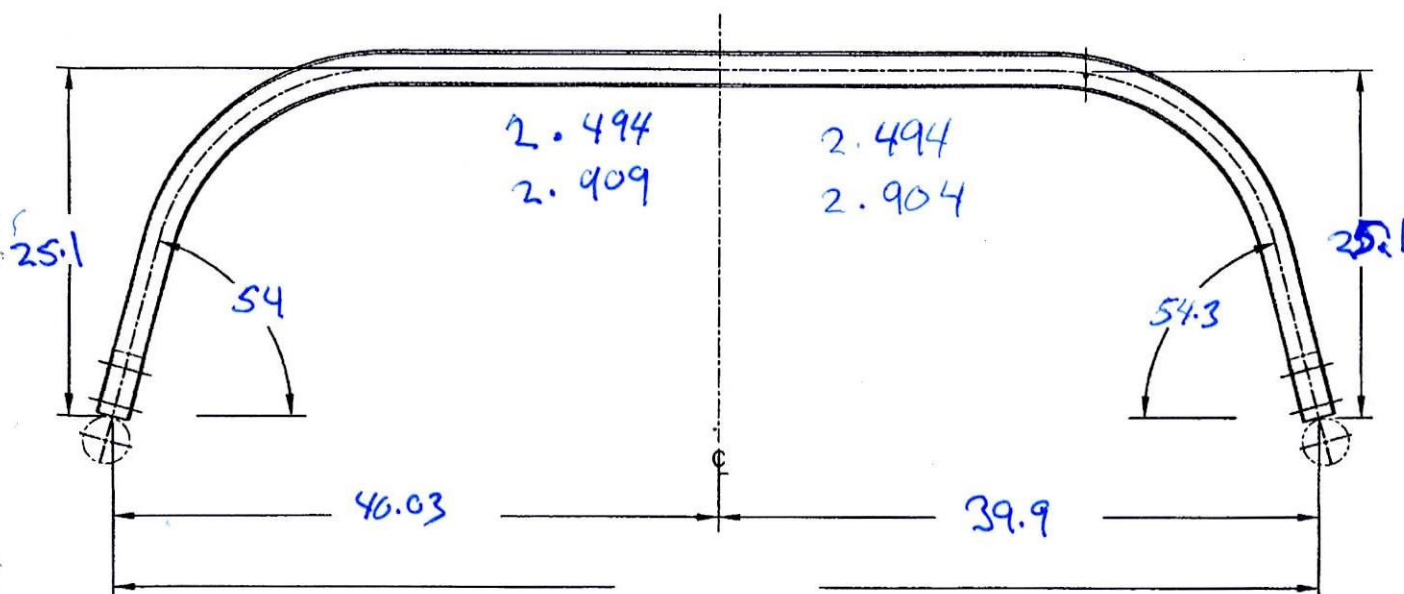
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
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Misidentified ☐	Past Due ☐																																																														

DART AEROSPACE LTD	DAS 03 9-89	Work Order: 162392
Description: Crosstube Aft, with Step		Part Number: D119-796-241
Inspection Dwg: D119-796-241	Rev: +J 17-6-7	Page 1 of 1

Required Dimension	Min	Max
Height	24.840	25.100
1/2 Span	39.810	40.070
Angle	54°	57°
Total Span	79.620	80.140
Bending Passes	8	--
Crushing	--	8.5%



	Side A	Side B
Bending Passes	11	11
Crushing	7.7%	7.6%
Comments		

QC15 Inspection	DAS 8 9-89
Date	17.08.11

Rev	Date	Change	Revised by	Approved
A	15.04.14	New Issue	KJ	
B	15.11.12	Min angle revised	KJ	
C	15.12.15	Dwg Rev updated	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

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RETURN TO
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UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 162-392
20170607

D119-796-241 XTUBE ASSY (AW119 MKII AFT)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: MASK D5134-041/-042 DAMPER SUPPORT ASSEMBLIES, CUFFS, D5136-1/-2 CONTACT PADS, THE COMPLETE CIRCUMFERENCE OF THE TUBE UNDER THE D5122-1 CENTER SUPPORT AND THE TAB ON THE D5515-1 GROUNDING CLAMP PRIOR TO APPLICATION OF CLEAR COAT/PAINT.
IF NECESSARY TOUCH UP PRIMER ON OUTSIDE OF CROSSTUBE PER DART QSI 005 4.2.
APPLY MATTE CLEAR COAT TO THE UNDERSIDE OF CROSSTUBE AS SHOWN (B4-2, HATCHED AREA) PER QSI 005 4.2.
MASK THE UNDERSIDE OF CROSSTUBE AS SHOWN (B4-2, HATCHED AREA).
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY USING PART NUMBER "D119-796-241" AND BATCH NUMBER ON INSIDE OF CUFF PER QSI 044 6.4
- 7) WEIGHT: 26.26 lbs
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE.
THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 9) INSTALL D5122-1 CENTER SUPPORT HAND TIGHT ONLY. DO NOT TORQUE. INSTALL RED TAG TO INDICATE "D5122-1 CENTER SUPPORT MUST BE BONDED PER IIN-D119-796 PRIOR TO FLIGHT".
- 10) PRIOR TO FINISHING, ABRASE MATING SURFACES OF D5136-1/-2 AND SURFACE OF CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5136-1/-2 CONTACT PADS AND INSTALL AT AN 8.4" OFFSET FROM THE CROSSTUBE BENDING PLANE. INSTALL MS21920-25 CLAMPS AND D5123-5 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
- 11) TORQUE MS21920 CLAMPS 80 - 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY. THE NUT HAS NOT BOTTOMED-OUT AFTER TORQUING AND THE NUT IS FACING AFT.
- 12) PRIOR TO FINISHING, POSITION AND INSTALL D5134-041/-042 DAMPER SUPPORTS USING JIG DT10085. ABRASE MATING SURFACES OF THE D5134-041/-042 DAMPER SUPPORTS AND CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5134-041/-042. INSTALL MS21920-25 CLAMPS AND D5123-1 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS. ENSURE THAT THE MS21920 CLAMPS ARE POSITIONED AS SHOWN IN DETAIL C.
- 13) PRIOR TO FINISHING, ABRASE MATING SURFACES OF CROSSTUBE AND D5152-043 WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. INSTALL D5152-043 WITH LAYER OF PROSEAL 890 ON INSIDE CONCAVE SURFACE, 0.100" MIN THK LOCATE D5152-043 USING TOOL DT10112.
- 14) INSTALL THE D5515-1 GROUNDING CLAMP AND ASSOCIATED HARDWARE PER DETAIL "C" PRIOR TO FINISHING. TORQUE THE MS21042-3 NUT 12-15 IN-LB. COMPLETELY SEAL THE EDGES OF THE CLAMP USING PROSEAL 890.
- 15) CARRY OUT A RESISTANCE CHECK BETWEEN THE D5515-1 GROUNDING CLAMP AND ANY UNPAINTED SECTION OF THE CROSSTUBE IN ACCORDANCE WITH AC43-13-1B CHAPTER 11. MAXIMUM RESISTANCE IS 3 MEGOHMS.

RELEASED
2017-05-04
ECN 17-536

J	ADD NOTE 14 & 15 ON SHT 1. ADD PAINT/PRIMER MASKING LOCATIONS, REVISE NOTES ON SHT 1 & 4, REVISE BOM ON SHT 2 TO ADD GROUNDING CLAMP AND ASSOCIATED HARDWARE. REF PAR 17-560	ML	17.02.10
I	D6023-106 MATERIAL REPLACES D6009-106. D5136-1/-2 & D5134-041/-042 NOW INSTALLED ON PRIMER.	AP	15.10.13
H	NOTE 9 RE-WRITTEN. BONDING INSTRUCTIONS MOVED TO IIN. SEE PREVIOUS REV FOR DETAILS.	AP	15.07.02
G	FINISHING ORDER ADJUSTED. UPDATE BEND TOLERANCE AND TRN DETAIL TOLERANCE TO MATCH D119-796-141 DWG	AP	15.04.24
F	REMOVED PRIMER/PAINT ON CUFFS, 2.516 WAS 2.500 (C8-5)	AP	15.02.03
E	D5152-043 WAS D5150-3, SCOTCH BRITE 7447 RED WAS 180 GRIT SANDPAPER	DB	15.01.15
D	ADD D5150-3 STEP POST (2X), MOVED INSPECTION WINDOW DETAIL TO SHT 1, MODIFIED NOTES ON SH 1 & 3	DB	14.11.25
C	CR3212-4-07 RIVETS WAS CR3212-4-05 RIVETS, RADIUS BLOCK WAS NUT PLATE ASSEMBLY (BOM), REMOVED 7.5 DEG CUFF HOLE OFFSET (A1-3), REDUCED CUFF DIA TO 2.500 (C8-5), ADD INSPECTION WINDOW	AP	14.10.23
B	ORIENTATION OF D5122-1 CENTER SUPPORT WAS CORRECTED. D5123-5 ADDED UNDER D5136-1/-2 CONTACT PADS. ADDED D2873-043 NUT PLATE ASSY & CR3212-4-05 RIVETS. ADDED REFERENCE TO SKIDTUBES FOR LOCATING CUFF HOLES. RE-ORGANIZED NOTES, REMOVED REDUNDANT INFORMATION.	AP	14.09.08
A	NEW ISSUE	AP	14.08.07
REV.	DESCRIPTION	BY	DATE
DESIGN	AP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	JMH	DRAWING NO.	REV. J
MFG. APPR.	DP	D119-796-241	SHEET 1 OF 7
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT)	NTS
DATE	17.02.10	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



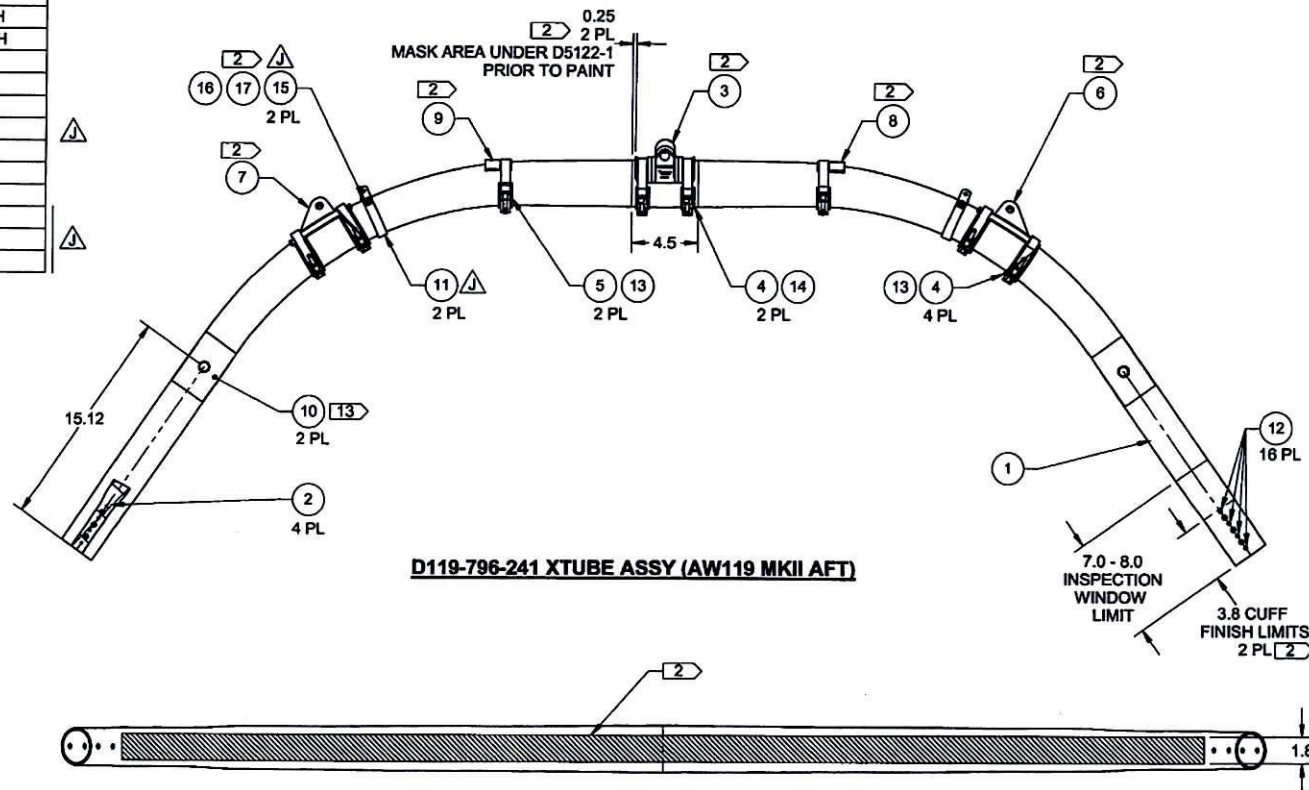
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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By 					
				Lead hand / Supervisor Approval Verification 					
				QC / QA Coordinator Approval 					

Root Cause			FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
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Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____						
Misidentified	☐	Past Due	☐							

ITEM	QTY	P/N	DESCRIPTION
	X	D119-796-241	XTUBE ASSY (AW119 MKII AFT)
1	1	D119-796-241BND	CROSSTUBE, AFT
2	4	D2873-043	RADIUS BLOCK
3	1	D5122-1	CENTER SUPPORT
4	6	D5123-1	CLAMP CUSHION
5	2	D5123-5	CLAMP CUSHION
6	1	D5134-041	DAMPER SUPPORT ASSY, LH
7	1	D5134-042	DAMPER SUPPORT ASSY, RH
8	1	D5136-1	CONTACT PAD, LH
9	1	D5136-2	CONTACT PAD, RH
10	2	D5152-043	AFT POST MOUNT ASSY
11	2	D5515-1	GROUNDING CLAMP
12	16	CR3212-4-07	CSK RIVET, CHERRY MAX
13	6	MS21920-25	CLAMP
14	2	MS21920-28	CLAMP
15	2	MS27039-1-08	SCREW, PAN-HEAD
16	2	MS21042-3	NUT
17	4	NAS1149D0332J	WASHER



RELEASED
2017-05-04

APPROVED

DESIGN	AP	DART AEROSPACE LTD	
DRAWN	ML	HAWKESBURY, ONTARIO, CANADA	
CHECKED	JMH	DRAWING NO.	REV. J
MFG. APPR.	DP	D119-796-241	SHEET 2 OF 7
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT)	NTS
DATE	17.02.10	COPYRIGHT © 2014 BY DART AEROSPACE LTD	
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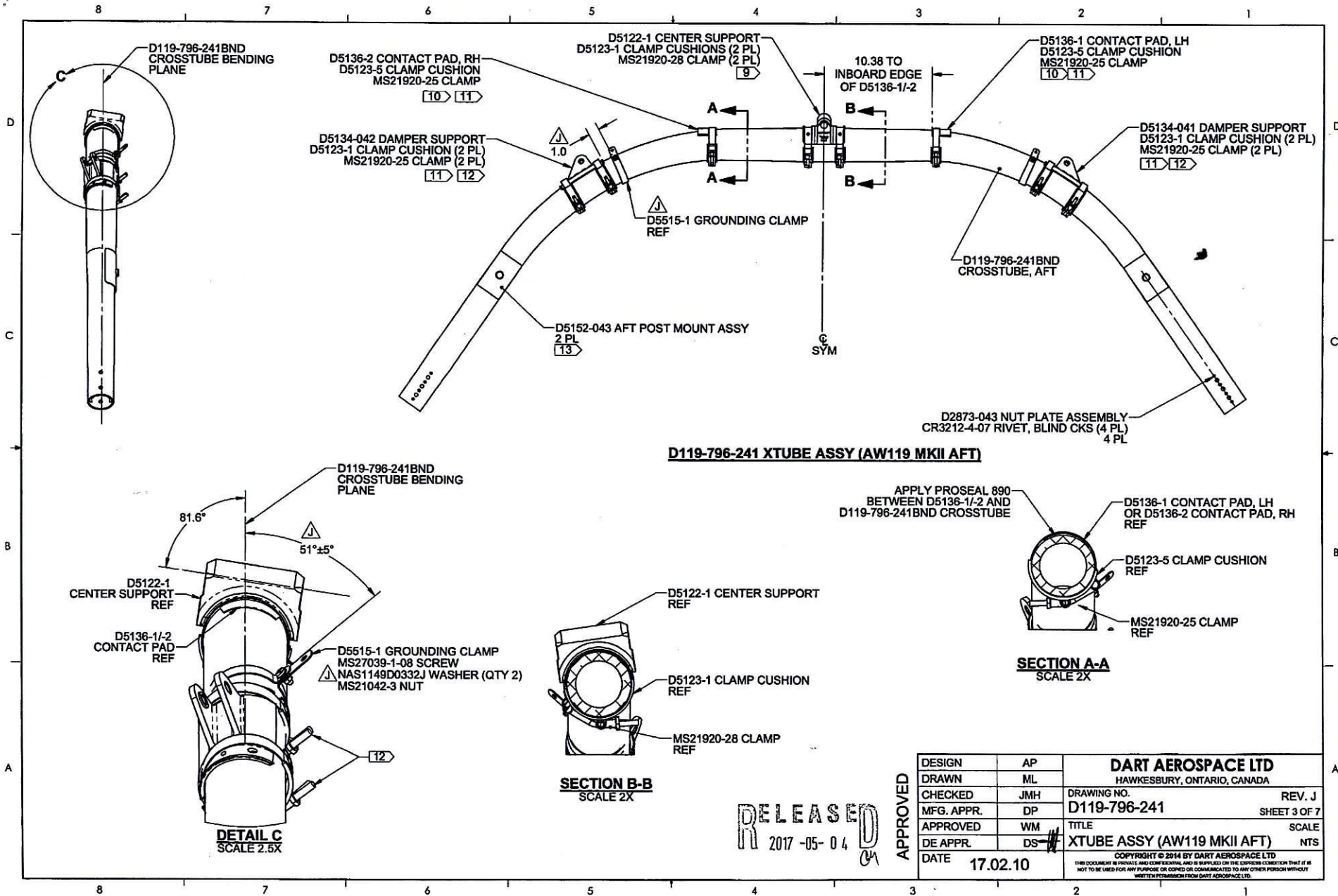


WORK ORDER NON-CONFORMANCE / UPDATE

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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : ☐					



DQA: _____ Date: _____



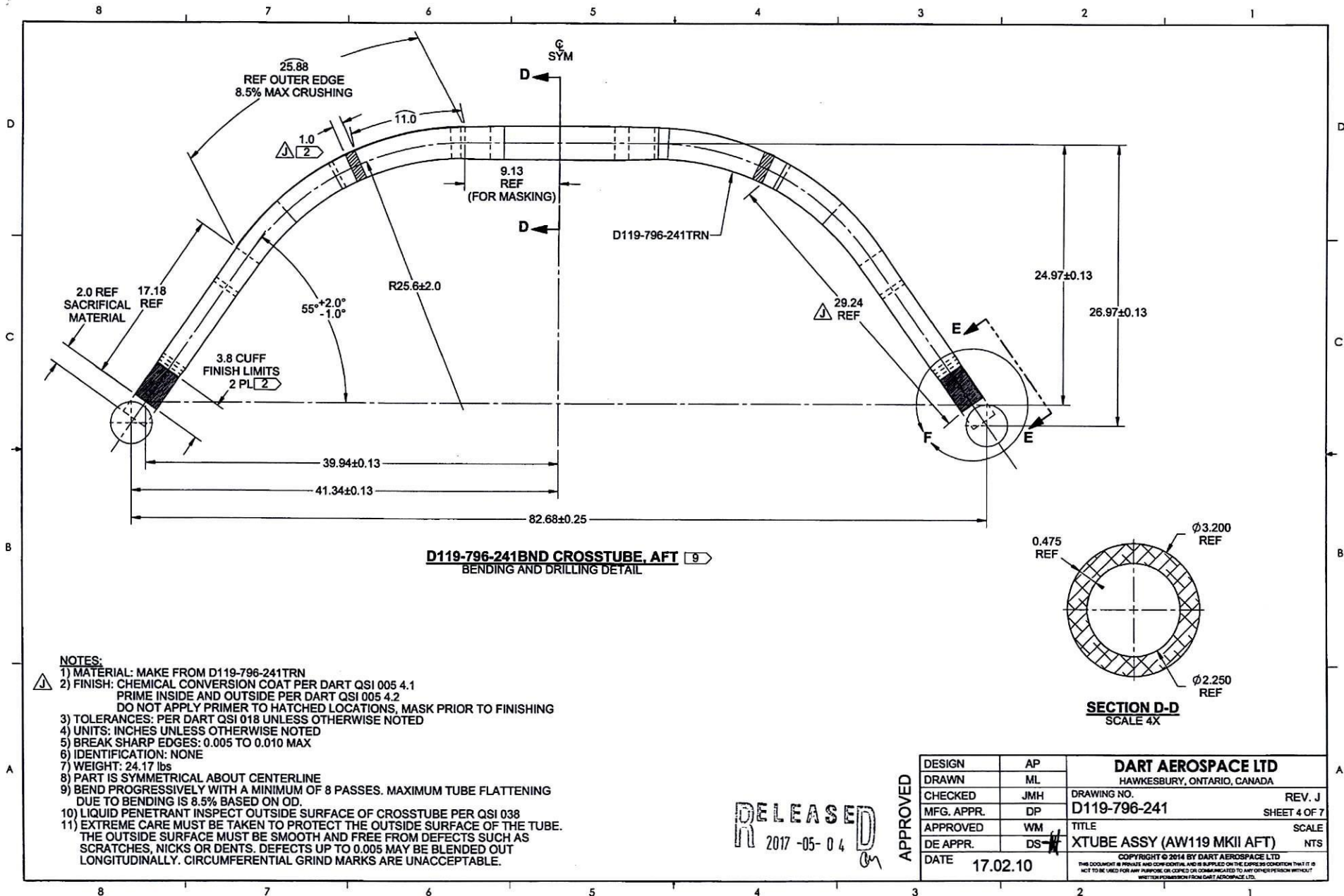
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								Completed By 	
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Root Cause			FAULT CATEGORY							
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Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
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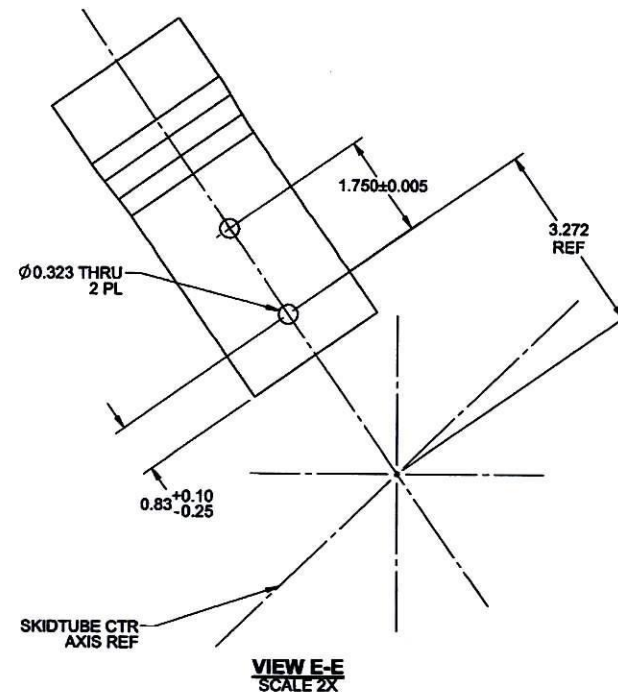
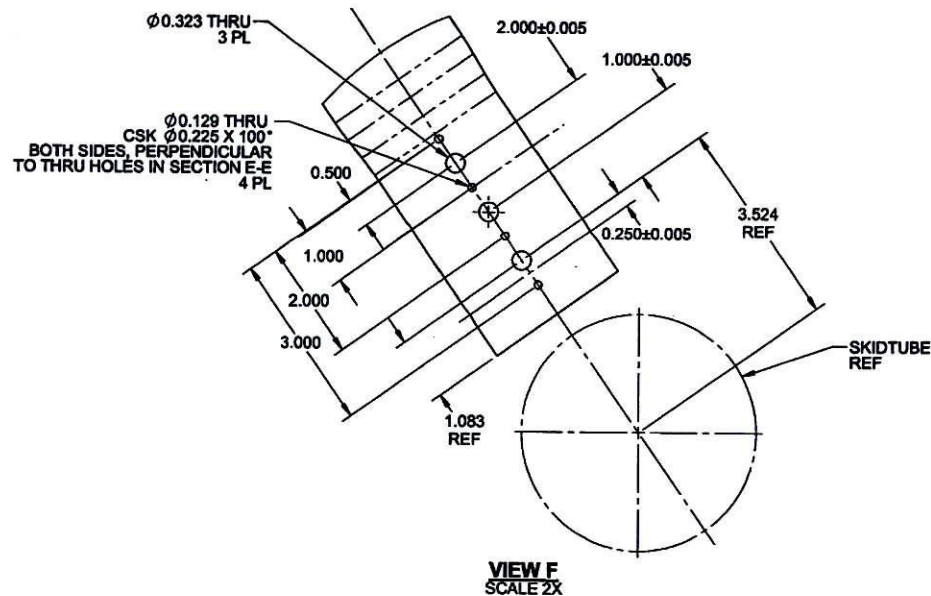


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
		OTHER : ☐							



RELEASED
 2017-05-04

APPROVED

DESIGN	AP	DART AEROSPACE USA, INC.	
DRAWN	ML	KENT, WA	
CHECKED	JMH	DRAWING NO.	REV. J
MFG. APPR.	DP	D119-796-241	SHEET 5 OF 7
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT)	NTS
DATE	17.02.10	COPYRIGHT © 2014 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____

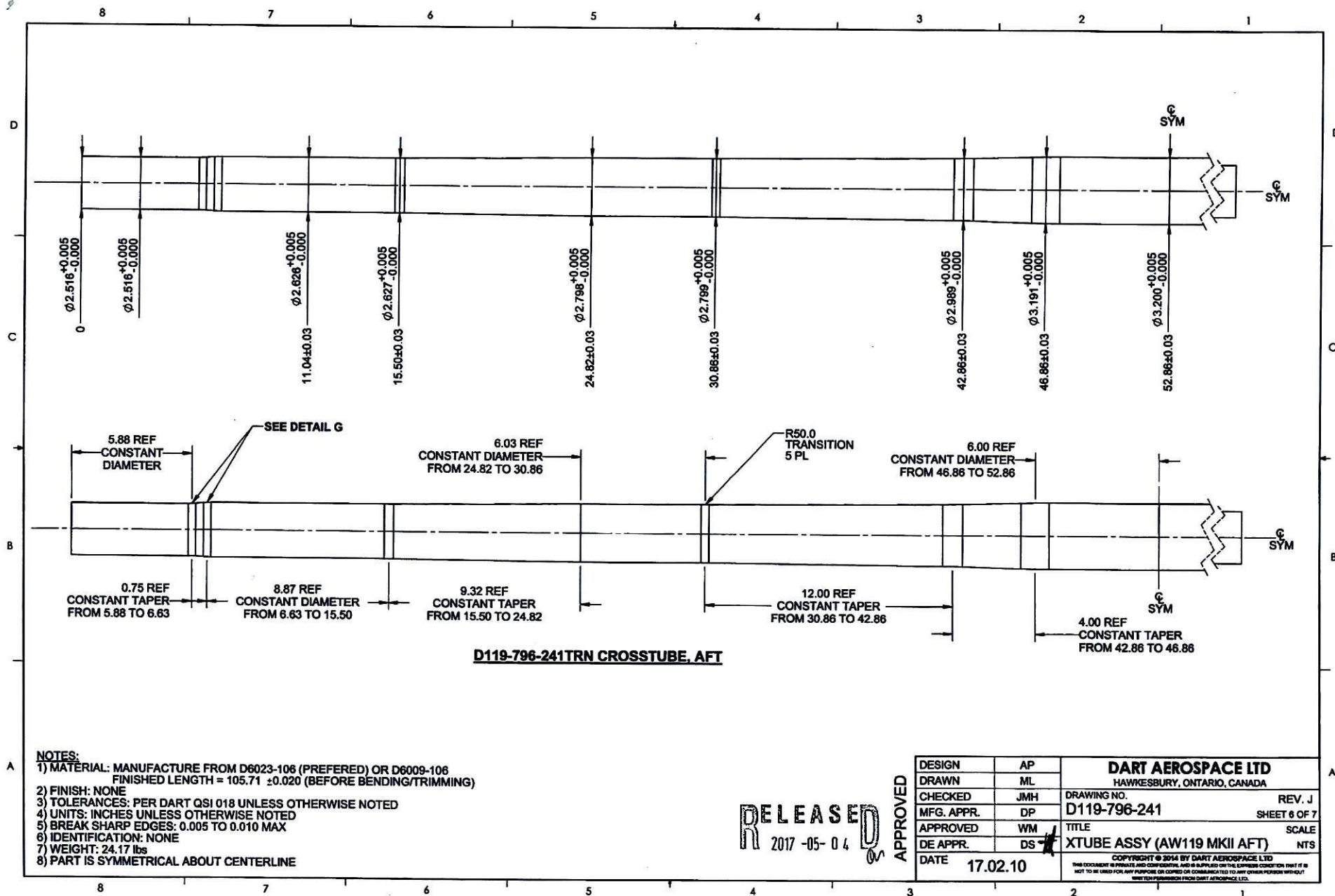


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Misabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER :							
Misidentified ☐	☐ Past Due								



DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

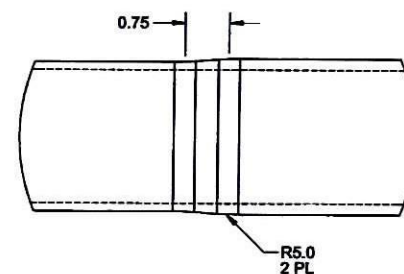
QA Closed: _____ Date: _____

Work Order update only ☐

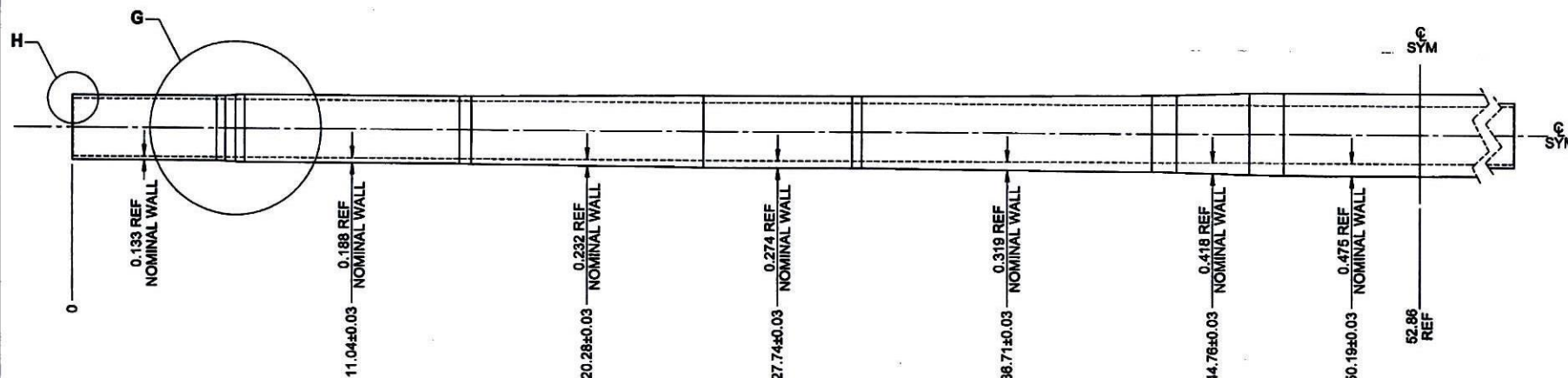
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

CHAMFER AS
REQUIRED FOR
TOOLING

DETAIL H
SCALE 4X



DETAIL G
SCALE 2X



D119-796-241 TRN CROSSTUBE, AFT
SUPPLEMENTAL VIEW: NOMINAL WALL THICKNESS

RELEASED
2017-05-04

APPROVED

DESIGN	AP	DART AEROSPACE LTD	
DRAWN	ML	HAWKESBURY, ONTARIO, CANADA	
CHECKED	JMH	DRAWING NO.	REV. J
MFG. APPR.	DP	D119-796-241	SHEET 7 OF 7
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	XTUBE ASSY (AW119 MKII AFT)	NTS
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DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval																																																																		
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Root Cause <table style="width:100%; border: none;"> <tr><td style="border: none;">Environment ☐</td><td style="border: none;">No Re-verification ☐</td></tr> <tr><td style="border: none;">Design ☐</td><td style="border: none;">Operator ☐</td></tr> <tr><td style="border: none;">Doc/Data ☐</td><td style="border: none;">Offset/Setup ☐</td></tr> <tr><td style="border: none;">Equip/Tooling ☐</td><td style="border: none;">Supplier ☐</td></tr> <tr><td style="border: none;">Handling/Pre ☐</td><td style="border: none;">Training ☐</td></tr> <tr><td style="border: none;">Material ☐</td><td style="border: none;">Use for Testing ☐</td></tr> <tr><td style="border: none;">Internal Transport ☐</td><td style="border: none;">Poor Information ☐</td></tr> <tr><td style="border: none;">Tribal Knowledge ☐</td><td style="border: none;">Rushing ☐</td></tr> <tr><td style="border: none;">LOA ☐</td><td style="border: none;">Product Improvement ☐</td></tr> <tr><td style="border: none;">Substation ☐</td><td style="border: none;">Process Improvement ☐</td></tr> <tr><td style="border: none;">Past Expiry Date ☐</td><td style="border: none;">Manufacturing Process ☐</td></tr> <tr><td style="border: none;">Misidentified ☐</td><td style="border: none;">Past Due ☐</td></tr> </table>		Environment ☐	No Re-verification ☐	Design ☐	Operator ☐	Doc/Data ☐	Offset/Setup ☐	Equip/Tooling ☐	Supplier ☐	Handling/Pre ☐	Training ☐	Material ☐	Use for Testing ☐	Internal Transport ☐	Poor Information ☐	Tribal Knowledge ☐	Rushing ☐	LOA ☐	Product Improvement ☐	Substation ☐	Process Improvement ☐	Past Expiry Date ☐	Manufacturing Process ☐	Misidentified ☐	Past Due ☐	FAULT CATEGORY <table style="width:100%; border: none;"> <tr> <td style="border: none;">Pressure/Forced ☐</td> <td style="border: none;">Temperature/Cure ☐</td> <td style="border: none;">Power Loss/Surge ☐</td> <td style="border: none;">Positioned Wrong ☐</td> </tr> <tr> <td style="border: none;">Bending ☐</td> <td style="border: none;">Set-up ☐</td> <td style="border: none;">Folio/Program ☐</td> <td style="border: none;">Outside Dimensions ☐</td> </tr> <tr> <td style="border: none;">Centre Not Concentric ☐</td> <td style="border: none;">BOM/Route ☐</td> <td style="border: none;">Grain ☐</td> <td style="border: none;">Over/Under tolerance ☐</td> </tr> <tr> <td style="border: none;">Cracks ☐</td> <td style="border: none;">Broken/Damage/Defect ☐</td> <td style="border: none;">Weld ☐</td> <td style="border: none;">Part Incorrect ☐</td> </tr> <tr> <td style="border: none;">Crimp/Kink/Ripple/Wave ☐</td> <td style="border: none;">Inspection Incomplete/Unqualified ☐</td> <td style="border: none;">Wrong Stock Pulled ☐</td> <td style="border: none;">Part Lost/Missing ☐</td> </tr> <tr> <td style="border: none;">Cuffs ☐</td> <td style="border: none;">Contamination ☐</td> <td style="border: none;">Out of Sequence ☐</td> <td style="border: none;">Part Moved ☐</td> </tr> <tr> <td style="border: none;">Crushing ☐</td> <td style="border: none;">Countersink ☐</td> <td style="border: none;">Off-set ☐</td> <td style="border: none;">Drawing ☐</td> </tr> <tr> <td style="border: none;">Heat Treat ☐</td> <td style="border: none;">Cut Too Short ☐</td> <td style="border: none;">Mislabeled ☐</td> <td style="border: none;">Finish ☐</td> </tr> <tr> <td style="border: none;">Wave/Twist in Tube ☐</td> <td style="border: none;">Instructions Incomplete/Unclear ☐</td> <td style="border: none;">Fit/Function ☐</td> <td style="border: none;">Misread ☐</td> </tr> <tr> <td style="border: none;">Marks/Chatter ☐</td> <td style="border: none;">Drill Holes ☐</td> <td style="border: none;">Misaligned/off center ☐</td> <td style="border: none;">Turning Sequence ☐</td> </tr> </table>						Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	OTHER : _____	
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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO37837**

Purchase Order Date 9/22/2017

PO Print Date 9/26/2017

Page Number 4 of 10

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact
Ship To Phone
Ship Via: Delivered
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Total: \$0.00

10	161888	D412-664-203 CROSSTUBE	9/26/2017	1.00	\$0.00	\$0.00
			Yes 9/26/2017			

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417

Line Total: \$0.00

11	162392	D119-796-241 CROSSTUBE	9/26/2017	1.00	\$0.00	\$0.00
			Yes 9/26/2017			

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417

DAS
38
9-89

Line Total: \$0.00

Note:

9/26/2017

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO33395	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO37837
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT ON 8 CROSSTUBES AND 8 FITTINGS AS PER PO37837

1 END FITTING, EYE , ITEM ID# D4884-1 , W/O# 166321

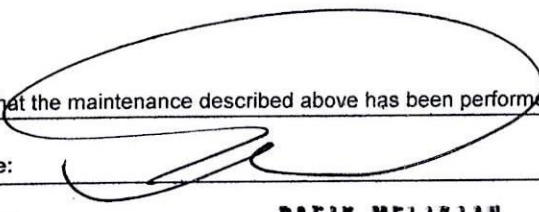
1 END FITTING , ITEM ID# D4885-3 , W/O# 163756

4 AFT CROSSTUBES , ITEM ID# D412-664-203 , W/O# 164205, 164206, 161887, 161888

4 AFT CROSSTUBES , ITEM ID# D119-796-241 , W/O# 162392, 165570, 165571, 165572

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-13 ***NO CRACK FOUND*** PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , EMU. MPO15896, DEV. MPO11715 , UV LIGHT M-20142						SEP 25 2017	 
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp 	Date: SEP 25 2017
Name: RAFIK MELIKIAN		